

**TELENOMUS (HYMENOPTERA: SCELIONIDAE) EGG PARASITES  
OF ERINNYIS ELLO (LEPIDOPTERA: SPHINGIDAE)**

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*Abstract.*—*Telenomus dilophonotae* Cameron, *T. connectans* Ashmead, and *T. monilicornis* Ashmead (= *sphingis* auct.) are diagnosed. *Telenomus dilophonotae* (from Costa Rica, Guyana, and Brazil) has been reared from the eggs of *Erinnyis ello* (L.) and *Perigonia stulta* Herrich-Schäffer (Lepidoptera: Sphingidae); *T. connectans* (Florida, Dominican Republic, Grenada, Costa Rica, and Brazil) from *E. ello*, *Sphinx merops* Boisduval, *Xylophanes tersa* (L.), and *X. neoptolemus* (Stoll) (Sphingidae); *T. monilicornis* has been reared from *E. ello* in Costa Rica and the Dominican Republic. The species *Telenomus puticulus* Johnson is considered a junior synonym of *connectans*.

*Key Words:* parasitic wasps, *Telenomus*, *Erinnyis*

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The moth *Erinnyis ello* (L.) (Lepidoptera: Sphingidae) is a common Neotropical and southern Nearctic species that often reaches pest status on a number of plants, in particular, manioc (*Manihot esculenta*) and other Euphorbiaceae. The reported egg parasitoids of *E. ello* comprise three species: *Telenomus connectans* Ashmead, *Telenomus dilophonotae* Cameron, and *Telenomus monilicornis* Ashmead. All have previously been recorded as parasites of various sphingids, including *E. ello*, but identification on the basis of the literature has been impossible. They were described around the turn of the century, and no revision or key to the *Telenomus* species of the Neotropical region is available. My objectives are to provide diagnoses of these species to assist in their identification and to present taxonomic notes on the species. The morphological terminology follows that outlined in Johnson (1984) and Bin and Dessart (1983). The biology of *connectans* and *dilophonotae* and the impact upon their host will be discussed

in a separate paper by Dr. João Manuel de Abreu.

***Telenomus connectans* Ashmead**

*Telenomus connectans* Ashmead, 1895: 792, ♂, ♀. Lectotype (examined) in British Museum (Natural History).

*Liophanurus connectans*: Kieffer, 1926: 79.

*Telenomus connectans*: Masner, 1965: 111.

*Telenomus puticulus* Johnson, 1984: 54, ♀.

Holotype (examined) in Canadian National Collection of Insects, Arachnids and Nematodes. **NEW SYNONYMY.**

Diagnosis: Legs, including coxae, and basal antennal segments yellow; occipital carina complete medially; ♀ clava 5-merous, claval formula A11-A7/1,2,2,2,2; ♂ antenna 12-merous; preocellar pit present; T1 with 2-3 pairs of sublateral setae; ♂ genitalia with 3 large teeth per digitus, penis valves and laminae volsellares strongly melanized (Fig. 2; see Johnson 1984 for illustrations of habitus and female antenna).

*Telenomus connectans* was earlier reported by Gahan (1930) to parasitize the eggs of *E. ello* in the Dominican Republic. Dr. William Haber has also reared this species from the eggs of *Sphinx merops* Boisduval, *Xylophanes tersa* (L.), *X. neoptolemus* (Stoll) and *Perigonia stulta* Herrich-Schäffer in Monteverde, Costa Rica. The species *Telenomus puticulus*, known only from Florida, was described because of the unusual presence of the preocellar pit and multiple pairs of sublateral setae on T1. The first of these structures commonly occurs in the genus *Trissolcus* Ashmead (all of which are parasites of the eggs of Pentatomomorpha), but is extremely rare in *Telenomus* (see Bin and Dessart 1983). In all respects *puticulus* seems to correspond with the abundant Neotropical material now available to me. Thus the distribution of *T. connectans* extends from Brazil through both the Lesser Antilles and Central America to Florida.

The structure of the male genitalia indicates that *connectans* belongs to the *californicus* group of species (large ditigal teeth, laminae volsellares approximated medially, aedeagal lobe short). As I earlier pointed out (Johnson 1984), it is distinguished from practically all of those species by the preocellar pit and sublateral setae. In many respects it is quite similar to species of *Telenomus* that parasitize the eggs of Pentatomidae (Hemiptera), not, however, with the New World species of the *podisi* group, but rather with those of the Old World (e.g. *T. chloropus* Thomson, *T. seychellensis* Kieffer, *T. triptus* Nixon and *T. cyrus* Nixon).

#### *Telenomus dilophonotae* Cameron

*Telenomus dilophonotae* Cameron, 1913: 133, ♀. Holotype (examined) in British Museum (Natural History).

*Telenomus dilophonotae*: Masner, 1965: 113.

Diagnosis.—Legs and antennae dark brown; occipital carina complete medially;

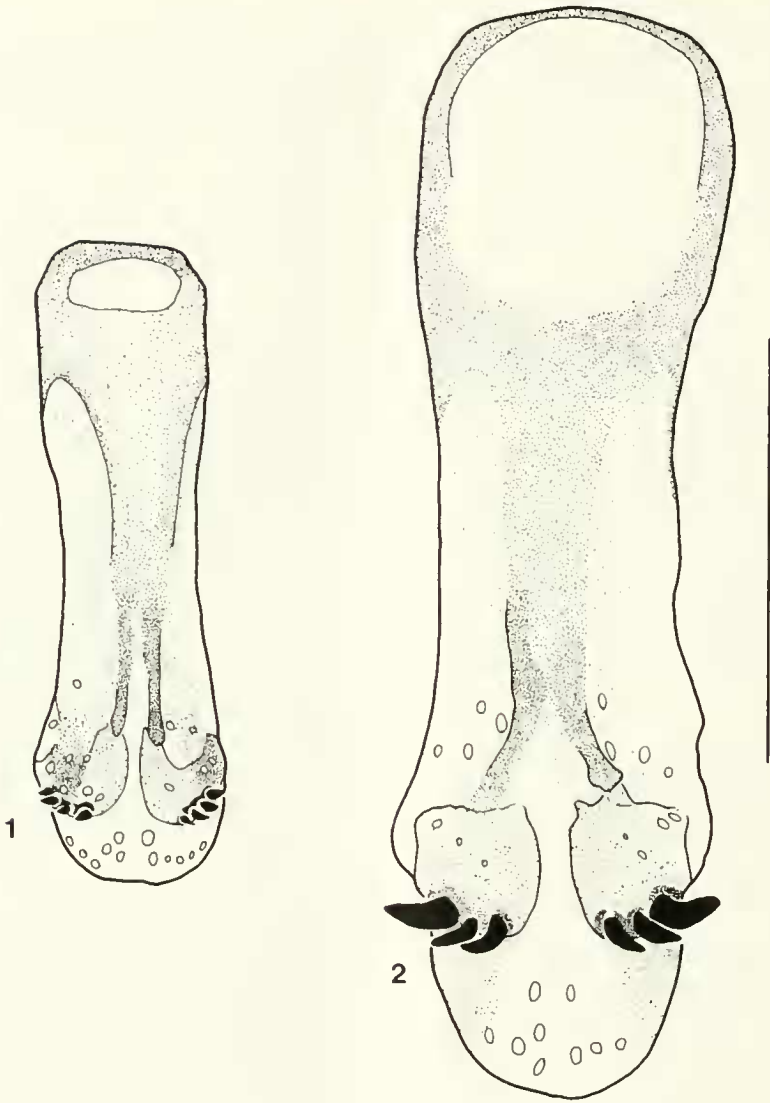
♀ clava 6-merous (Fig. 3), claval formula (A11-A7/1,2,2,2,2; ♂ antenna 10-merous (Fig. 4); preocellar pit absent; T1 with 1 pair of sublateral setae; ♂ genitalia with 4 small teeth per digitus, generally weakly melanized throughout (Fig. 1).

This species is noteworthy among *Telenomus* in that the female antennal clava is composed of 6 antennomeres (see below), and the male antenna possesses but 10 antennomeres. The genus *Pseudotelenomus* (now considered a synonym of *Telenomus*) was described by Costa Lima (1928) to contain another Brazilian species, *P. pachycois* (a reduviid egg parasite) in which the male antenna lacked a segment; in this case the fusion of antennomeres is still clearly visible. I can find no indication of fusion in *dilophonotae*. A5 is the sex segment in telenomines generally (see Bin and Vinson 1986) and in *dilophonotae* this segment is unusually enlarged. Thus reduction of antennomeres has occurred distal to this segment. There is some disagreement among workers as to which segments are taken to comprise the clava or club of the female antenna. I am using here the definition outlined in Johnson (1984): I consider A6 to be a clavomere, not because it is greatly broader than the preceding antennomere, but because its apical surface is excavated and parallels the basal surface of A7. The antennae of this species, particularly those of the male, seem to be rather weakly sclerotized and often collapse when air-dried.

Cameron's original description of *dilophonotae* (females only) was based on material reared from *Erinnyis* (then known as *Dilophonota*) in Guyana; Haber has also reared this species from the eggs of *Perigonia stulta* and an unidentified sphingid in Costa Rica (Monteverde, and Santa Rosa National Park in Guanacaste Province).

#### *Telenomus monilicornis* Ashmead

*Telenomus monilicornis* Ashmead, 1894: 203, ♂. Holotype (examined) in British Museum (Natural History).



Figs. 1, 2. Male genitalia, ventral view. 1. *Telenomus dilophonotae*. 2. *Telenomus connectans*. Scale line = 0.10 mm.

*Telenomus monilicornis*: Kieffer, 1912: 22.

*Phamirus monilicornis*: Kieffer, 1926: 63.

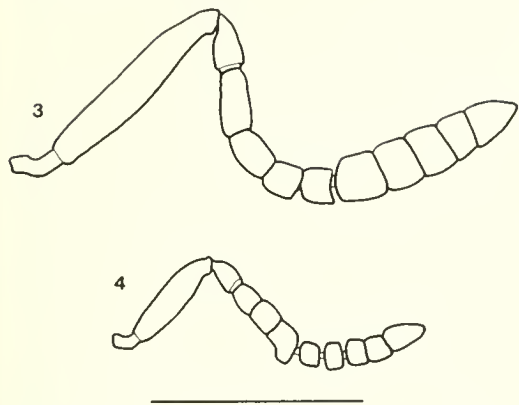
*Telenomus monilicornis*: Johnson, 1983: 446.

*Telenomus monilicornis*: Johnson, 1984: 11.

Diagnosis.—Legs and antennae dark brown; occipital carina broadly interrupted medially; ♀ clava 5-merous; ♂ antenna 12-merous; preocellar pit absent; T1 with 1 pair

of sublateral setae; ♂ genitalia with four small teeth per digitus, weakly melanized, similar to *T. dilophonotae* (for illustration see Johnson 1984).

*Telenomus monilicornis* (= *sphingis* auct.) is a widely distributed species, most commonly encountered because it parasitizes the eggs of *Manduca* spp. in the southeastern United States. Ashmead (1887) originally described the species *Teleas sphingis* as a



Figs. 3, 4. *Telenomus dilophonotae*. 3. Female antenna. 4. Male antenna. Scale line = 0.25 mm.

parasite of *Manduca*; however, examination of the holotype proved that this name actually and unfortunately belongs to a species of the *crassiclava* species group, all parasites of the eggs of Homoptera (Johnson 1984). Thus the correct name for this common species is *monilicornis*. I have specimens reared from the eggs of *E. ello* from Costa Rica (Puntarenas, 2 km N Cuatro Cruces) and the Dominican Republic (San Cristóbal).

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